APPENDIX C

Arcadia Police Department

SMS Text-to-9-1-1 via TTY/TDD

Test Results

March 6, 2014

Page Intentionally Blank

Test Cases

1. Verify PSAP procedures in place when non-test SMS 9-1-1 text is delivered
2. Verify test 9-1-1 SMS text is delivered to correct PSAP and rebid capability
3. Verify 2 simultaneous SMS 9-1-1 text can be handled by one call taker
4. Verify bounce back message delivered when third 9-1-1 SMS text is sent
5. Verify text conversation is still up if cell phone is powered down and powered up
6. Verify 9-1-1 SMS texter receives a bounce back when added to deny list
7. Verify 9-1-1 SMS texter receives a bounce back when PSAP has provisioned a Time of Day
8. Verify ability for second call taker to take over SMS text session
9. Verify bounce back is received when both trunks are busy
10. Verify transfer capability from Arcadia PD to Verdugo PD
11. Verify results when texter send more than 160 characters and verify results when sending symbols not supported in TTY
12. Verify SMS Text to 9-1-1 sessions are being recorded in ECaTS

CASE #1	Non test Text is sent to Arcadia Police Department
Objective/ Description	This test verifies that when Arcadia Police Department receives a non-test text they will manually send canned bounce back response Text (when service is not available)
Resources	Texter in field and centroid within Arcadia Police Department's jurisdiction. Call taker to receive text TCS to monitor text session
Test Setup	1. Verify Texter is ready 2. Send test SMS 9-1-1 Text to verify bounce back (from Veizon Wireless) 3. Verify TCC is provisioned and ready 4. Verify the target PSAP is available. 5. Verizon Wireless/TCS turn on 9-1-1 texting for Arcadia Police Department
Procedure	1. Text message "I have a flat tire" 2. Call taker should recognized this is not part of our testing (because the text does not start with this "is a test") and reply back with the canned bounce back message (should be same message they would see from Verizon Wireless) 3. PSAP to end text session.
Verification	1. Verify bounce back received from Verizon Wireless on initial test 2. Once service is activated verify canned bounce back is sent by PSAP. 3. Verify release text received by Texter.
Text time	Send to receive:
Notes	Test text from 909-229-XXXX at 09:39:20 Bounce back message received while system is live, texter is using a Verizon Wireless phone **WHY is bounce back being received by 909-229-XXXX number while the system is live?** Test text from 213-422-XXXX at 09:42:00 Received at Arcadia PD Call taker screen TTY window opens and TTY greeting is automatically generated Call taker ALI screen is displaying the call as WPH2 but location is coarse based on plotted coordinates (34.13807200, -118.048911) Call taker ALI screen does not indicate that the call is SMS TEXT as was the case at Downey PD Viper TTY screen does display SMS in the TTY screen, indicating that the call is from a wireless texter and is not a standard TTY call Texter and call taker are able to text back and forth and text is clear on both sides Call taker sent manually entered canned bounce back message that was programmed in by AT&T technician. Texter received canned bounce back fine. End session initiated by Arcadia PD
Analysis	TCS indicated that the SMS TEXT indicator on the ALI screen of a text call must be programmed by TCS on a per PSAP basis. This was not done for Arcadia PD. This is to be set as a requirement for all deployments of text in California to ensure that the ALI display is consistent across all PSAPs. Discussed the appearance of WHP2 as the class of service whereas W911 was seen at Downey PD. TCS has designated 132 as the PositionSource for Text 9-1-1 calls. This numeric value is different than that sent for WRLS, W911, and WPH2. Because the standard has not been set for the PositionSource of a text call, this may not be interpreted in the same way by both the AT&T and Verizon ALI Databases. Need to discuss with AT&T and Verizon (Intrado) Database folks how they are mapping this PositionSource in their CoS tables to identify if this is the cause of the WPH2 appearance.

	The automatic TTY greeting is designated at the line level within the Viper. The AT&T disabled the automatic TTY greeting part way into our texting trial. This feature was disabled for all lines at the PSAP. While the automatic message was turned on, the call taker received the first message from the texter prior to the automatic TTY greeting being sent to the texter. The messages did not interfere with one another on the initial launch of the TTY greeting automatic message.

CASE #2	Texter send 9-1-1 SMS text and routes to Arcadia Police Department
Objective/ Description	This test verifies Text can be delivered to Arcadia Police Department and rebid for location is functioning.
Resources	Texter in field and centroid within Arcadia Police Department's jurisdiction. Verizon cell phone with location agent activated Call taker to receive text TCS to monitor text session
Test Setup	1. Verify Texter is ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available.
Procedure	1. Send a SMS text (starts with this is a test) to 911 to initiate a dialog. 2. Respond to the incoming RFA at the PSAP and send a few messages back and forth between the PSAP and texter. 3. After 20 seconds rebid for location. 4. PSAP ends text session.
Verification	1. Verify the RFA is received by the PSAP configured for this test case. 2. Verify the transcript is received by the PSAP when the dialog connected, and location information is properly displayed and call back number displayed. 3. Verify all messages sent by the PSAP are sent to the mobile handset. 4. Verify all messages sent by the mobile are received by the PSAP. 5. verify lat/long changes from centroid to actual location of texter 6. Verify release text received by Texter.
Text time	Send to receive:
Notes	Was location populated in CAD? Test text from 916-698-XXXX Received at Arcadia PD at 09:28:19 Received with ALI Class of Service of WPH2 but location information is coarse. First message from the PSAP to the call taker was preceded with a "T" TTY greeting automatic message was enabled and sent to the texter Texter's message came through on the PSAP's TTY screen prior to the automatic message being sent PSAP and texter able to send messages back and forth fine without garbling Rebid is tested with location agent phone on Case #10
Analysis	Texts sent to 9-1-1 route to Arcadia PD and are able to be answered. Automatic TTY greeting that is sent from the CPE does not appear to interfere with the initial text from the texter as was the case at Downey PD.

CASE # N/A	Texter sends SMS to 911, TCS TCC receives and provides routing instruction, Route to PSAP – Arcadia Police Department does not respond to text
Objective/ Description	This test verifies that TCC responds to an initial text that is not responded to by the PSAP with a canned message.
Resources	Texter in field within Arcadia Police Department's jurisdiction. Call taker to receive text TCS to monitor text session Timer to time send receive time
Test Setup	1. Mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available.
Procedure	1. Send a SMS to 911 to initiate a text session. 2. PSAP does not respond to initial text 3. After ?? seconds TCC send canned message to Texter. 4. If PSAP and Texter converse a couple of times and the PSAP goes silent for ?? seconds, will a canned message be sent to Texter?
Verification	1. Verify the RFA is received by the PSAP configured for this test case. 2. Verify the transcript is received by the PSAP when the dialog connected 3. Verify PSAP non response message received by Texter
Text time	Send to receive:
Notes	Date/Time: Tester: Skip this test case. TCS currently does not have the functionality to send a bounce back message if the 911 text is not responded to by the PSAP within a set period of time.

CASE #3	Two simultaneous SMS Text 911 from different users, Routed to Arcadia Police Department
Objective/ Description	This test verifies that TCC can process the scenario of initiating two dialogs from different texters with the delivery of the messages to Arcadia Police Department.
Resources	2 SMS Texters 1 9-1-1 Call Taker 2 timers
Test Setup	1. Two mobile phones activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available.
Procedure	1. Initiate two dialogs by sending a SMS to 911 from two different mobile handsets simultaneously. 2. Respond to the two incoming RFAs at the PSAP and send a few messages back and forth between the PSAP and texter . 3. PSAP ends text session.
Verification	1. Verify that both RFAs are received by the PSAP configured for this test case. 2. Verify the transcript for each dialog is received by the PSAP 3. Verify all messages sent by the PSAP are sent to the texter. 4. Verify all messages sent by the texter are received by the PSAP.
Text time	Text session 1 send to receive Text session 2 send to receive
Notes	Test text from 949-677-XXXX at 09:48:36 and 916-698-XXXX at 09:49:50 Received at Arcadia PD on trunks 911001 and 911002 respectively 949-677-XXXX sent "Help I need help" was sent the automatic greeting and then the call taker answered the 2nd text call The system placed the first call on hold 916-698-XXXX sent "A test from the second phone" and received the automatic TTY greeting When the call taker went back to the 949 text that was on hold and began typing to the texter, the TTY screened cleared of all past history. Call taker placed the 949 text call on a manual hold and went to the 916 text call The TTY screen again cleared when the call taker began typing again Call taker places 916 text on hold manually and went back to 949 text Call taker and texter are able to text back and forth fine, but the screen continues to clear on the first message sent after a texter is placed on hold. 916 texter sent a text while they were on hold "Test test test" Call taker returned to 916 text call and did not receive the text that was sent while the texter was on hold Call taker returned to the 949 number and texter sent a message to the call taker with the session live and off hold The call taker TTY screen cleared when the message was received from the texter A voice test call was made to 9-1-1 The text calls were placed on hold to answer the voice call by the same call taker When the call taker returned to the text call and removed it from hold the TTY screen continued to clear upon initiation of a text message immediately following the hold period
Analysis	When a text call is placed on hold either manually or automatically by the system, the TTY screen automatically clears once the call taker returns to the text call and removes it from hold and a subsequent text message is sent.

CASE #4	Three simultaneous SMS Text to 911 from different texters, TCS TCC receives and provides routing instruction, 2 text Route to Arcadia Police Department, 1 text receives a Bounce Back Message
Objective/ Description	This test verifies that TCC can process the scenario of initiating two dialogs from different texters with the delivery of the messages to Arcadia Police Department, and the third texter should receive a bounce back message. Arcadia Police Department provisioned with session limit of 2.
Resources	3 SMS Texters 2 9-1-1 Call Taker
Test Setup	1. Three Verizon Wireless mobile phones 2. Verify TCC is provisioned and ready with session limit of 2 3. Verify the target PSAP is available.
Procedure	1. Initiate three dialogs by sending a SMS to 911 from three different mobile handsets simultaneously. 2. Respond to the two incoming RFAs at the PSAP and send a few messages back and forth between the PSAP and mobile handsets. 3. PSAP ends Text session.
Verification	1. Verify that both RFAs are received by the PSAP configured for this test case. 2. Verify the transcript for each dialog is received by the PSAP. 3. Verify all messages sent by the PSAP are sent to the texter. 4. Verify all messages sent by the texter are received by the PSAP. 5. Verify third texter received a bounce back message
Text time	Send to receive:
Notes	Test text sent from 213-422-XXXX, 916-698-XXXX, and 949-677-XXXX at about 10:11:00 213-422-XXXX received at Arcadia PD and a canned reply is sent 213-422-XXXX received a random character prior to receiving the reply from the PSAP 916-698-XXXX received at Arcadia PD and canned reply is sent and received back Texter sends message while on hold at the PSAP PSAP does not receive the messages sent by the texter while that text call is on hold at the PSAP 949-677-XXXX received bounce back message
Analysis	For a PSAP with a text session limit of two, a third texter with receive a bounce back message if the text capable PSAP already has two text sessions open simultaneously. Texts sent from a texter while that texter is on hold at the PSAP are not received by the PSAP

CASE #5	Text Conversation when device powered down powered back up
Objective/ Description	This test verifies the text conversation continues even if the mobile phone is powered down and turned back on within 5 minutes.
Resources	Texter in field and centroid within Arcadia Police Department's jurisdiction 9-1-1 Call taker Timer
Test Setup	1. Mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available.
Procedure	1. Send SMS to 911 to initiate a dialog 2. Respond to the incoming RFA at the PSAP and send a few messages back and forth between the PSAP and mobile 3. Texter powers down mobile phone. 4. PSAP to send another text while phone is powered down. 5. Texter powers on phone after waiting 5 minutes 6. PSAP verifies original SMS conversation is up. 7. Texter sends SMS to continue same text session 8. Respond to the incoming RFA at the PSAP and send a few messages back and forth between the PSAP and texter. 9. PSAP ends text session
Verification	1. PSAP and texter verifies status of SMS conversation was continuous, verify no automatic message was delivered by PSAP or TCS because of time between text messages.
Text time	Send to receive:
Notes	Test text from 916-698-XXXX at 10:18:13 "This is test #4 I will power down the phone" Received at Arcadia PD as "This is test '4 I will poer down the phone" This message was garbled at the PSAP slightly – they lost the "W" in power and the # became a ' Texter powered down the phone and then powered back on again No message was sent by the PSAP while the phone was powered down Texter and call taker able to exchange messages once phone is powered back on Texter sent "I will piwerbdown again" and immediately powered down PSAP received only '' and did not receive the above message PSAP sent "911 what is your emergency q ga" while the phone was powered down Texter powered phone back on again and received "QQQ what is your emergency qsga" Message received from the PSAP after the phone is powered back on is slightly garbled
Analysis	A PSAP is able to continue the text conversation if a texter powers their phone off and on during a text session.

CASE #6	Add number to Deny List	C 11
Objective/ Description	**This test verifies when a number is added to the deny list they will receive a bounce back message**	
Resources	SMS 9-1-1 texter from 916-207-XXXX 9-1-1 Call taker	
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM911 Admin tool	
Procedure	1. Texter 916-207-XXXX to send text to PSAP 2. PSAP sends text back to texter and ends session 3. Add 916-207-XXXX to the deny list 4. Initiate an SMS 9-1-1 text from 916-207-XXXX	
Verification	1. Verify first text from 916-207-XXXX was received by PSAP 2. Verify that 9-1-1 SMS texter receives a bounce back message after 916-207-XXXX is added to the deny list.	
Text time	Send to receive:	
Notes	Date/Time: Tester: This test was not performed.	

CASE #7	Time of Day Setting	C 12
Objective/ Description	**This test verifies when a time of day rule is added to the PSAP PRF subscriber will receive a bounce back message**	
Resources	SMS 9-1-1 texter from 916-207-XXXX 9-1-1 Call taker	
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available.	
Procedure	1. Setup PSAP for Time of Day Rule through the GEM9-1-1 Admin Tool - close PSAP for Monday, 1/6/14 from current time until midnight. 2. Initiate an SMS 9-1-1 text	
Verification	1. Verify that 9-1-1 SMS texter receives a bounce back message	
Text time	Send to receive:	
Notes	Date/Time: Tester: This test was not performed.	

CASE #8	Verify ability for second call taker to take over SMS text session
Objective/ Description	This test verifies that a second call taker at Arcadia Police Department can take over a text session from initial call taker
Resources	Texter in field and centroid within Arcadia Police Department's jurisdiction Call taker to receive text Second call taker available to take over text TCS to monitor text session
Test Setup	1. Verify Texter is ready 2. Verify the target PSAP is available.
Procedure	1. Send SMSText message to 9-1-1 2. Arcadia Police Department to reply to Texter 3. Exchange a few texts 4. Have second call taker at Arcadia Police Department take over text session from another call taker position 5. Have second call taker exchange a few texts 6. Have Arcadia Police Department end text session
Verification	1. Verify text was received by first call taker 2. Verify second call taker is able to takeover text session 3 Verify second call taker can see the entire text session 3. Verify release message received by Texter.
Text time	Send to receive:
Notes	How is this accomplished at the PSAP? Document exact words sent and received Test text from 916-698-XXXX at 10:31:15 Received at Arcadia PD and canned message was returned to the texter Texter and call taker able to exchange messages back and forth Call taker 1 placed texter on hold Call taker 2 picked up the line The TTY window launched for call taker 2 Call taker 2 was able to see all messages on the TTY screen when it opened TTY screen cleared when call taker 2 began to type a message to the texter Call taker 1 released the line Call taker 2 and texter able to exchange messages back and forth Call taker 1 is still able to see the continuing conversation on the open TTY screen but is not able to respond to the texter once the line is released.
Analysis	A second call taker was able to take over a text session from the initial call taker. The TTY screen opened with the text history initially but cleared once the call taker or texter sent the first message after the session was transferred to the new call taker.

	C 14
CASE #9	**Verify bounce back message received when both trunks are out of service**
Objective/ Description	This test verifies SMS texter will receive a bounce back message if both trunks are out of service (Arcadia Police Department text limit is set at two)
Resources	Texter in field and centroid within Arcadia Police Department's jurisdiction. Call taker to receive text TCS to monitor text session Verizon translation team
Test Setup	1. Verify Texter is ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available 4. Verify Verizon translation team ready
Procedure	1. Verizon translation team to take both trunks out of service 2. Texter places SMS text to 9-1-1
Verification	1. Verify the bounce back message is received by the texter
Text time	Send to receive:
Notes	This test was not performed. Live 9-1-1 trunks were used for testing at Arcadia PD. Not able to remove them from service without detriment to the PSAP.

CASE #10	Verify transfer capability from Arcadia PD to Verdugo Fire
Objective/ Description	This test will determine if a texter can be transferred from Arcadia PD to Verdugo Fire
Resources	Texter in field and centroid within Arcadia PD jurisdiction. 2 mobile phones (one with location agent and one without Call taker at Arcadia Police Department to receive text Call taker at Verdugo Fire to receive text TCS to monitor text session Timer to time send receive time
Test Setup	1. Mobile phones (one with Location Agent active) and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAPs are available.
Procedure	1. Send an SMS text to 9-1-1 to initiate a text session at Arcadia PD . 2. PSAP sends response to initial text – and exchange a few texts. 3. Arcadia PD sends texter a text say they will be transferring to Verdugo Fire 4. Arcadia PD uses transfer button to transfer text to Verdugo Fire. 5. Texter sends another text 6. That text should arrive at Verdugo Fire 7. Verdugo Fire replies to text (they exchange a few text) 8. PSAP ends text session.
Verification	1. Verify the initial SMS text was received by Arcadia PD 2. Verify transfer button activates and transfer took place 3. Verify the transcript is received by both PSAPs 4. Verify texter received all messages and verify PSAPs received all messages
Text time	Send to receive:
Notes	Test text from 949-677-XXXX at 13:37:40 Received at Arcadia PD Initial location received with class of service of WPH2 but coordinates are coarse 34.13817200, -118.048911 initial coordinates Texter and call taker text back and forth Call taker initiates a rebid at 10:39:03 Loction agent is active on the texter's phone Location remains coarse on call taker screen Call taker initiates a rebid again at 10:40:27 Location is updated in ALI screen as 34.13725700, -118.040027, 164 meters, 95% This location maps in front of the PD building CDR reflects the most up to date location information Arcadia PD initiates a transfer to Verdugo Fire using a star code at 10:42:35 Verdugo Fire receives the call as an open line, no tones are received. Verdugo Fire opens their TTY screen manually??? Verdugo Fire sends "what is your address q ga" Texter receives message and returns "I'm testing" Texter and Verdugo Fire exchange messages back and forth while Arcadia PD remains on the line Arcadia PD is able to see all texts Arcadia PD releases the line and Verdugo Fire remains on the line with the texter Verdugo Fire and texter are able to continue to exchange messages after PD drops Messages are received clearly without garbling at Verdugo Fire

Analysis	Arcadia PD is able to utilize a star code transfer to transfer a text call to Verdugo Fire. The text call transfer is received at the Verdugo Fire end as an open line. A message will need to be spoken to or texted to the receiving agency on a transfer to inform them that this is a transfer of a text caller. Verdugo Fire did not receive the SMS text history upon transfer, as is expected for TTY text.

CASE #11	Verify results when texter sends more than 160 characters
Objective/ Description	This test will indicate the results when a text is sent with over 160 characters
Resources	Texter in field and centroid within Arcadia Police Department's jurisdiction. Call taker to receive text TCS to monitor text session Timer to time send receive time
Test Setup	1. Mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available.
Procedure	1. Send the following text message: **Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.** Which totals 380 characters. 2. PSAP sends response to initial text. 3. Texter sends text containing following symbols embedded in the text: @ # % & 4. Arcadia Police Department call taker ends text session 5. If screen shot is available please ask call taker to print the screen
Verification	1. Verify the initial SMS text was received by the PSAP 2. Verify the transcript is received by the PSAP 3. Verify texter received the disconnect session text from PSAP
Text time	Send to receive:
Notes	**TTY is half duplex – have texter and call taker send text messages at the same.** **Have texter send 5 texts messages (one right after another) with no response from call taker.** Document exact words sent and received Test text from 949-677-XXXX at 10:52:35 First text sent from the texter was the long text transcribed above. Received at Arcadia PD The text of the long message is received fine at the PSAP initially A portion of the long text message then continues to repeat itself twice more. The text begins part way through the second and third time and does not complete to the end the third time Symbols were used on test case #4 – the # sign was typed by the texter and was received as an ' at the PSAP.
Analysis	A text greater than 160 characters is received as one single text at the PSAP within the TTY screen.

CASE #12	Verify text session are available in ECaTS	C 18
Objective/ Description	This test will determine if a PSAP using Standard TTY test sessions appear in ECaTS	
Resources	ECaTS	
Test Setup	None	
Procedure	1. Log into ECaTS pu11 RAW data for 1-6-2013 for Arcadia Police Department	
Verification	1. Verify SMS 9-1-1 Text to 9-1-1 was recorded 2. Verify the transcript is received by the PSAP when the dialog connected	
Text time	Send to receive:	
Notes	TTY transcripts are not available in ECaTS with the Intrado Viper. This is something that should be discussed with Intrado as a future enhancement. This should be addressed with all CPE vendors and specified as a required output element in future CPE requirements. TTY transcript is available at Verdugo Fire for the transferred call.	